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AUTHOR Kluwin, Thomas N.; And Others
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ABSTRACT

This study investigated whether dialogue journal writing between hearing and hearing-impaired writers is an effective way of developing social relations between school peers. The project involved 37 teachers of the hearing-impaired and 127 completed journals written by students, aged 10 to 18 years, with at least a third grade reading level. Completed journals were coded using a discourse analysis approach. The coding system identified the initiation or maintenance of topics, the type of topics written about, and the degree of interpersonal involvement of the correspondents. Results showed that hearing writers exhibited greater use of self-expressive responses and hearing-impaired writers showed greater use of observations. Neither group showed a preference for initiating an interest in the other. As the relationship progressed over time, the writers became more interested in each other. It is concluded that the social and emotional benefits of journal exchanges between hearing and hearing-impaired school-aged writers are substantial to both sides of the exchange. (11 references) (JDD)

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The Development of Relationships Between Young Hearing Impaired and Hearing Writers Sharing Journals

Thomas N. Kluwin, Gallaudet University
Lynn Wismann-Horther, Willie Ross School
Arlene B. Kelly, Gallaudet University

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INTRODUCTION

Research on the social integration of hearing impaired students has generally revealed less than satisfactory relationships existing between hearing impaired children and their hearing school peers (Kennedy and Bruiniks, 1974; Kennedy et al., 1976) While these studies suffer from a variety of methodological weaknesses including very small samples, inadequate sample description, poor or non-existent validity or reliability information for instruments, and a general lack of context information, they are consistent in their reports of poor peer acceptance or infrequent interaction between hearing impaired and normal hearing school children. One exception to this bleak picture is Ladd, Munson, and Miller (1982) who reported that an intervention program was able over time to reverse this trend. The limitation with this finding is the study's use of multiple statistical tests which may have lead to the identification of spurious findings. Although, we cannot point to a clear history of research findings, the rather muddled history of peer relationships between hearing and hearing impaired students suggests two tentative directions. First, social relations between hearing impaired and hearing school peers are probably in need of improvement; and second, social relations between these two groups appear to be amenable to treatment programs.

At the same time, the writing skills of hearing impaired school aged child has been recognized as a severe problem (Thompson, 1936; Heider and Heider, 1940; Walter, 1955;

Kluwin, 1979). One bright light in this generally dismal picture has been the use of journal writing between hearing impaired students and their teachers (Staton et al., 1982; Yinger, 1985). While there are limitations in these demonstration projects, particularly the question of "halo effects", they point to journal writing as a useful tool for improving the written performance of hearing impaired children.

Writing extended prose is not merely a problem in adding words together in order to accomplish longer and longer strings. Rather it is a recursive process of thinking, organizing, planning, and translating, all of which are filtered through a conception of the purposes of the writing, the topic, and the audience (Applebee, 1984). This kind of complex activity requires practice in the composition of longer pieces of language. The usual procedure in schools is to use specific written assignments to give students practice in composing; however, an alternative to this has been the development of "free writing" or dialogue journal writing where the student is not constrained by the usual limitations of the classroom assignment (Yinger & Clark, 1981).

The two purposes for writing dialogue journals are to increase the verbal fluency of the writer and to help the writer develop a sense of audience. Composing, like any other complex human activity, requires some amount of practice in its totality. Increases in verbal fluency, the ability to readily put words down on paper, are accomplished through dialogue journal writing as a result of freeing the

writer from the constraints of written assignments, increasing the opportunities for producing volumes of writing, and at the same time, focusing the writer on a specific task. Writing in the dialogue journal helps develop a sense of audience because the writer has a specific individual to whom he or she is writing. This is the inherent notion of dialogue, a conversation in print between two people.

Based on a thin history of related research, we can conclude that written communication is a problem for hearing impaired school aged children as is social integration for them in public school programs. We might also conclude that some of the problems of the hearing impaired writer can be ameliorated through dialogue journal writing. Further it is apparent that attempts to establish relationships between hearing and hearing impaired peers can be successful. One possible outcome of these two separate research interests is to propose that dialogue journal writing might be a possible way to do two things at once. First, it may be a way to improve the writing skills of hearing impaired writers, and second, it may be a way to aid in the social integration of hearing impaired students. The first question will be left to another study. This paper will address the second concern, that is, is dialogue journal writing between hearing and hearing impaired writers a way of developing social relations between school peers?

This was an exploratory study intended to evaluate some of the benefits of such a writing project, specifically the social benefits to hearing and hearing impaired students of

writing back and forth to each other. As an exploratory study, we can only raise tentative questions and cannot pose specific hypotheses for testing. Since such a project has not been attempted before, this study had to be very tentative in the questions it could address, however, two questions seem worthy of investigation if we were to attempt to answer the issue of the utility of this method for improving social relations. First, who is most likely to initiate a concern for the other writer? Second, what is the nature of the relationship that develops?

METHOD

Project Description

The journal writing project described in this study was part of a larger project to improve the writing of hearing impaired students by having their teachers teach composition using a process approach rather than a product correction approach. The larger project is a two and one half year quasi-experimental study of the implementation of a writing program involving approximately 400 students in 10 public school districts around the United States. Of these students, 127 completed journals are included in this study.

The project instituted a system for hearing and hearing impaired students to share journals in two phases. The first phase took place from November, 1987 to February, 1988. During this time, those schools where no journal writing had ever been done by hearing impaired students began the process of doing journal writing with their hearing impaired stu-

dents. In one school, the hearing impaired students already had considerable experience with journal writing, so they began a small pilot project with 15 pairs of hearing impaired students. During a meeting with the project director, the chairperson of the English department at the high school where the pilot would be run and the teachers of English for the hearing impaired students discussed the problems of instituting a dialogue journal writing project between hearing and hearing impaired peers. Basic agreement was reached that an attempt would be made to exchange journals between deaf and hearing students once a week, that the deaf students would initiate the writing, that class time would be allowed for the hearing students to write, and that the students would know in advance who they were individually writing to. By the first of November, the 15 pairs were exchanging journals. This went on until January when the semester changed and classes were re-organized. The completed dairies were forwarded to the project director and were used as the basis for developing the coding system for the other journals.

The second phase began in March, 1988 and continued until June, 1988. During this phase, about 60% of the participants were involved in dialogue journal writing programs. The details of the individual exchange programs varied due to the differing grade levels and school placements that were involved.

Hearing impaired students were matched with hearing age peers in both cross-sex and same sex pairs. The only direc-

tive to the teachers of the hearing impaired was to locate hearing students with compatible interests who would be willing to participate. Most of the students were "blind" matched, that is, they did not know who their partner was. Several types of incentives were used with the hearing students including appeals to simple curiosity and extra credit inducements. The process was initiated by the hearing impaired students describing themselves in the journal. The hearing student then did the same. Teachers monitored the process to see that it was working and to prevent any abuse of the system.

Sample

The hearing impaired students in this study were severely to profoundly hearing impaired and ranged from 10 to 18 years of age. A minimal participation criteria of a third grade reading level was used for participation in the writing project. There were 37 teachers of the hearing impaired involved in the project.

TABLE 1
COMPARISON OF STUDY SUB-SAMPLES
Hearing Impaired Writers

VARIABLE	Total Study Sample (N = 453)	Journals Written (N = 257)	Journals Coded (N =127)
Age:			
mean	13.73	13.55	13.32
s.d.	3.08	3.00	2.97
Gender:			
% Female	47.8	48.0	50.0
Ethnicity:			
% Non-white	50.6	53.2	53.1
Hearing Loss:			
BEA mean	89.23	89.77	85.51
s.d.	47.55	55.25	21.09
Age of Onset:			
% At birth	91.2	87.7	86.4
Etiology**	Hereditary	Hereditary	Hereditary
Grade: % Sample			
4 to 6	37.1	38.0	38.2
7 to 9	26.4	32.1	32.8
10 to 12	36.5	29.9	29.0

**Modal after "unknown".

It is apparent from Table 1 that the subjects whose journals were coded are representative of those who wrote journals as well as of the entire study group.

Analysis

The completed journals were coded using a discourse analysis approach. The "t-units" of individual entries were coded for the identity of the writer, the sequence of the entry, the topic of the entry, and the maintenance of the topic across entries. The journals were topically coded using a system that focused on the nature of the relationship

that was developing between the other correspondents by coding for the initiation or maintenance of topics, the type of topics written about, and the degree of inter-personal involvement of the two other correspondents.

Table 2
Journal Content Coding System

CATEGORIES:		
Writer:		
	Hearing impaired	
	Hearing	
	Replacement hearing impaired	
	Replacement normal hearing	
	Teacher intrusion	
Topical Turn:		
	Salutation	Greetings, closings
	Initiation	Direct question
		Request for information
		Statement involving new topic
	Response	Response to previous question or request
	Continuation	Topic was used in previous entry
Subject:		
	First	Writer talks about himself/herself
	Second	Writer refers to other correspondent
	Third	Neither writer nor other correspondent
Topic:		
	Events	
	Activities	
	Relationships	
	Possessions	
	Issues	
	Self	
	Miscellaneous	

An entry was defined as anytime there was a change of writer and date. Teacher comments were not counted as entries; only student writing was counted. "T-units" were counted in order to have an operational definition of a unit of communication.

The subject of the communication was coded as a first, second or third person. First person subjects were coded when the writer talked about himself or herself. First person pronouns followed by verbs of emotion or reflection followed by a second person reference were coded as second person subjects. Second person subjects were the writer's references to the other correspondent. Third person subjects were situations where neither the writer nor the correspondent were referred to.

The purpose of the topical turn category was to identify changes between turns. If a topic started within a turn, it was coded as an initiation. Initiations included direct questions, requests for information, and statements involving new topics. Responses to previous question or requests were counted as such. A continuation was counted when the topic was maintained from the previous entry.

96% of the coding was done by two individuals who agreed 83% of the time (Pearson Product Moment Correlation for the categories used in this analysis was .91). A third individual code a small number of the journals resulting in a range of correlation coefficients from .81 to .97 for the three individuals. Since the third reader coded so few, the range of discrepancies can be safely ignored.

RESULTS

The average number of entries for a hearing impaired writer was 7.29 entries with a standard deviation of 6.52

entries while the average number of entries for a hearing writer was 7.31 with a standard deviation of 6.56 entries. The average number of t-units within a hearing impaired writer's entry was 4.4 with a standard deviation of 8.2 t-units while the average number of t-units in the entry of a hearing writer was 5.0 with a standard deviation of 10 t-units.

In order to create categories across t-units, summary descriptors were created across different classes of t-unit codes. **Objects** were defined as a first person subject talking about an event, activity, or a possession of their own. **Other Writer** references involved a second person subject and a discussion of relationships or issues. **Self-Expressions** involved a first person subject referring to his or her own relationships or personal issues. **Observations** were defined as discussions of third person references to events, activities, or possessions. **Comments** were third person remarks about relationships or issues. **Miscellaneous** remarks were greetings, closings, etc.

Table 3
Operational Definitions of Coding Categories

Original Coding Categories		New T-unit Types
Subject:	Topic:	
First	Event Activity Possession	Objects
Second	Relationships Issues	Other Writer
First	Relationships Issues	Self-expression
Third	Events Activities Possessions	Observations
Third	Relationships Issues	Comments
	Greetings Closings	Miscellaneous

More specific definitions of the codes in the left hand columns of Table 3 are available in Table 2. Table 4 presents a breakdown of the t-unit types by writer and turn.

Table 4
T-Unit Types by Correspondent and Topical Turn
Percent of T-Units by Type of Turn

	Initiations		Responses		Continuations	
	Deaf	Hearing	Deaf	Hearing	Deaf	Hearing
Objects	5.6	4.3	16.8	17.5	9.0	6.1
Other Writer	30.8	34.8	9.9	10.9	28.4	33.0
Self-Expressions	21.6	20.2	41.1	48.7	21.3	17.3
Observations	32.8	33.6	23.7	14.9	31.6	37.5
Comments	7.2	5.2	6.8	6.8	8.3	4.5
Miscellaneous	2.0	1.9	1.7	1.2	1.5	1.6
Total	100%	100%	100%	100%	100%	100%
# T-units	8009	5861	992	1142	2380	2605

66.1% of all t-units were initiations of new topics; 10.2% of all t-units were responses to initiations by the other writer; 23.7% of all t-units were continuations of previous topics.

Topics varied depending on the topical turn. Initiations are generally marked by t-units about the other writer or by general observations and to a lesser extent by self-expressions. Responses are predominantly self-expressions and to a lesser extent involve observations. Continuations resembled initiations in the distribution of category types. We might assume from this table that the differences were the result of the pragmatics of communication in that questions or other initiations required more personal types of responses.

Within a topical turn, there is little difference between the hearing and the hearing impaired writers on the basis of the categories of content they produced except that the hearing writers tended to write more about the other writer.

In all of Table 4, the largest discrepancy between the hearing and the hearing impaired writers in the category of t-unit produced is in the greater use of self-expressive responses by hearing writers and the greater use of observations as responses by the hearing impaired writers.

To address the question of who is most likely to initiate a concern for the other person, a log linear analysis of Table 4 using the factors of writer, topical turn, and t-unit category was computed. The categories of observations,

comments, and miscellaneous were pooled into a single category of non-personal t-units, that is, t-units with content involving someone or something other than the other writer. The two types of writers were considered, along with the three turn types, and four categories of t-unit type. A design using all of the main effects and all of the two-way interactions had a Chi Square value of 42.909 for 6 degrees of freedom. This has a p value of less than .001. This design was the design short of a saturated model that had the smallest chi square value. Essentially all cells can be expected to differ from their observed values. The greatest differences as measured by adjusted residuals were for the continuation of topics. Hearing writers continued fewer topics involving objects and miscellaneous topics while continuing more topics involving themselves. The reverse was true for the hearing impaired writers. The size of the adjusted residual was very small for the continuation of remarks about the other. Initiations as a group showed the least deviation from expected values. The hearing impaired writers were more likely to respond about objects and themselves while less likely to respond about miscellaneous topics. Both groups showed very little difference in their initiations about the other writer or about themselves. The first research question has not definitive answer. It appears that neither group shows a preference for initiating an interest in the other.

While the categorization of t-units can give useful information about the general flavor of the journals, entire

entries needed to be categorized in order to see patterns that developed between writers.

In order to test for the effects of changes in relationships over time, a two level category system for the journals based on the length of the relationship was created. The first level of the factor was the length of time the writers corresponded as measured by the number of entries. Diaries of fewer than 13 entries were considered "short" relationships; journals of between 13 and 20 entries were considered as "moderate" in length; and journals of greater than 20 entries were considered "long" relationships. The second level of journal length available as a measure of the relationship between writers was the position of a block of entries in the entire sequence of entries, that is, entries would be part of an initial, medial, or terminal block. Again the same criteria were applied. Initial entries were those occurring during the first twelve entries, medial during the thirteenth through twentieth; and final during entries after the twentieth. As a result of this scheme, there were six relationship lengths: short relationships, the initial set of entries for moderate relationships, the initial set of entries for long relationship, the final set of entries for moderate relationships the middle set of entries for long relationships, and the final set of entries for long relationships.

The number of t-units of each type were counted for each entry and a percentage of each type was then computed. Using these four percentages, six clusters of entry types were

computed using a cluster analysis procedure. Intimate entries were defined as those in which an average of 77% of each entry involved references to other person. Miscellaneous entries had a content with an average of 73% of the entry involving miscellaneous information. Intimate/Self entries included an average of 38% references to the other person and 38% references to the writer. External entries were those in which an average of 78% of each entry involved objects or events. Self-expressive entries were marked by an average of 77% of the content focusing on the writer of the entry. Intimate/Miscellaneous entries were divided between the two types of content: an average of 31% of the content involving the other writer and 35% providing various kinds of information.

The entry types were recoded to emphasize possible differences. The original "intimate' entry category remained the same. Entries containing intimate content and some other content were recoded as "mixed" types, and all other entry types were recoded as "non-intimate" entries. Table 5 summarizes the creation of the final category set through the aggregation of T-unit types.

Table 5
Creation of Entry Types for Time Analysis

Step 1: Further Reduction of T-unit types

T-unit Types:		Reduced Set:
Objects	------	Objects
Other Writer	------	Other Writer
Self-Expression	------	Self-Expression
Observations		
Comments	__	Miscellaneous
Miscellaneous		

Step 2: Creation of Entry Types

	T-unit Type:			
	Object	Other Writer	Self-Expres.	Misc.
Entry Type:				
Intimate		77%		
Miscellaneous				73%
Intimate/Self		38%	38%	
External	78%			
Self-Express.			77%	
Intimate/Misc.		31%		35%

Step 3: Reduction of Number of Entry Types

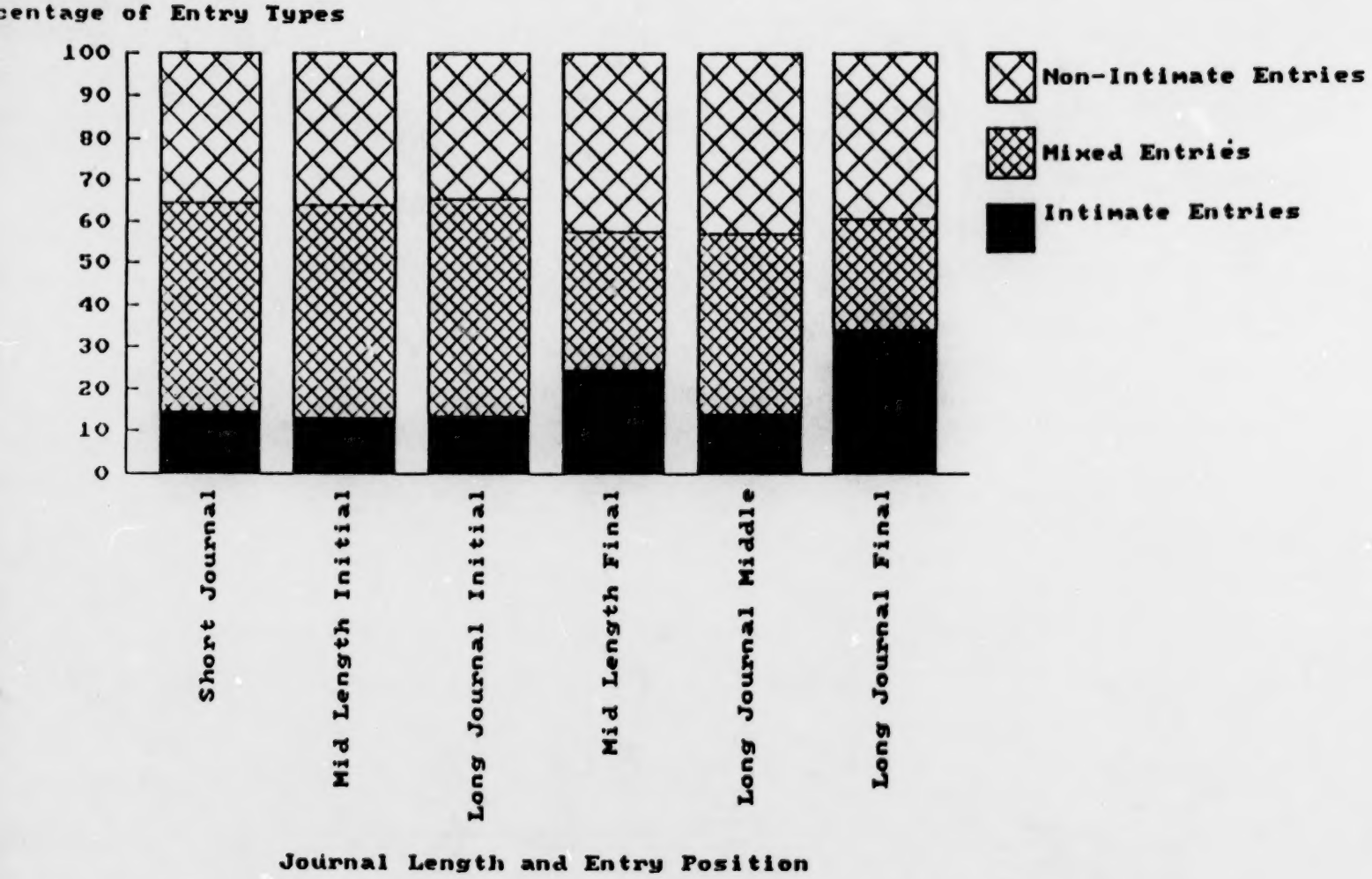
Entry Type		**Reduced Set**
Intimate	-----	Intimate
Intimate/Self Intimate/Misc.	_____	Mixed
External Self-Expression Miscellaneous	_____	Non-Intimate

Step 4: Operational Definitions

Intimate Entries	Approximately 77% of the content is second person references to relationships or issues.
Mixed Entries	At least one-third of the content is second person reference to relationships or issues. Remaining content is either self-expression or miscellaneous.
Non-Intimate	No appreciable content refers to the other writer.

Figure 1 Here

Figure 1
Distribution of Entry Types Over Time



Initial entries, regardless of the eventual length of the relationship are quite similar in their content. About 14% of the content is of an intimate nature; 50% is mixed intimate and other content, and 36% is non-intimate content. This suggests that no matter how long the relationship becomes the initial material will be about the same. This hypothesis was tested in a three by three Chi Square analysis using the three types of initial relationships by the three types of entry content. The Chi Square value was less than one. However, differences do occur in the later stages of relationships. As the relationship progresses, the amount of intimate entry content remains the same as opposed to non-intimate entry contents, but the proportion of the contents that is strictly intimate increases over time. This hypothesis was tested using a six by three Chi Square where the six types of time frames were crossed with the three types of entry content. The Chi Square for this table was 49.60 which has a p value of less than .001 for 10 degrees of freedom. In other words, as the journals became longer the writers became more interested in each other.

DISCUSSION

Several limitations need to be applied to this study. First, while the sample studied represents the total project group, generalizablity to a national sample is limited. Second, initial participation in the journal writing project was voluntary for all participants and appeared to be enhanced by some important parameters, such as the presence

of about 30 to 50 hearing impaired students at the same site, good formal and informal relations with the regular class teachers, and physical proximity to the corresponding class. Additional work needs to be done to identify the procedures which enhance the process before advocating the exchange of writing journals broadly.

Who is most likely to initiate a concern for the other person? There is no apparent difference between the hearing and the hearing impaired writers in their initiation of interest on each other. Differences that do occur are primarily in the continuation of topics and are related to miscellaneous comments and to discussion of objects.

Will a personal relationship develop over time as expressed by a pattern of entry types? The answer to this question is not simple. As time of contact increases, the degree of intimacy increases but not greatly from the early entries.

What is not retrievable from this data is the depth of the involvement or the "quality" of the relationship. It is equally possible from our data to conclude that the largest change in the relationship occurs in the short term as well as to conclude that an incremental change occurs slowly over time. We tend to think that there is an initial curiosity which is freed by the anonyminity of the journal writing process. Students who persist over time may go beyond the initial interest and curiosity to a deeper understanding of the other person, as seen in the increase in strictly intimate content over time.

The educational implications of this project will remain to be fully examined as analysis of the journals continues. It is already apparent that this process is effective in encouraging positive contact between hearing and hearing impaired adolescents in public school programs. As a ready alternative to elaborate sign language training or costly interpreting, its value is obvious. Further linguistic analysis will reveal whether or not the process benefits the written English of the hearing impaired students, however, both formal criteria provided by the analysis of the diary content and informal criteria collected by the research team during the process of implementing the journal writing system suggest that the social and emotional benefits of journal exchanges between hearing and hearing impaired school aged writers are substantial to both sides of the exchange.

One can easily project considerable future research on this corpus of material including investigations into age and gender effects on the types of relationships that develop. As this is an initial exploration of the coded journals, future analyses should produce more sophisticated categorizations of larger aggregations of the data. For example, the research assistants who read the journals noted "styles" of pairs of writers. At present, we have no quantitative way to describe these partnerships; however, there are various techniques for describing sequential language data that can be explored.

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